

Fast Picometer Mirror Mount, Phase I

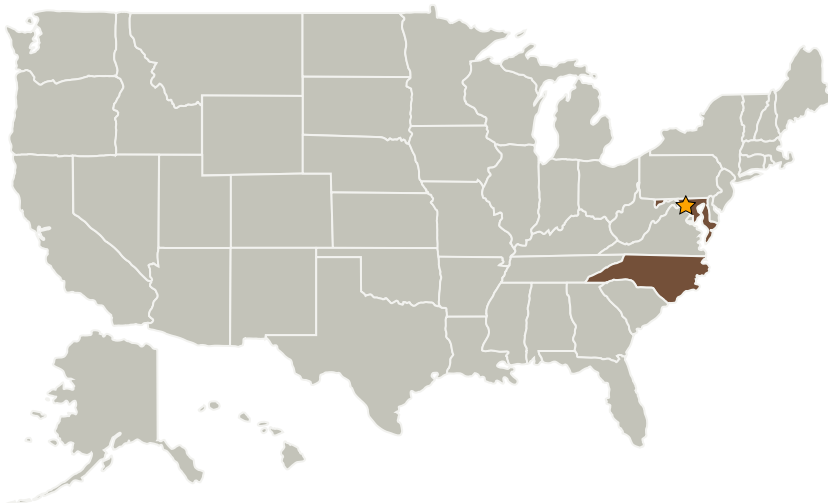
Completed Technology Project (2006 - 2006)



Project Introduction

The proposed innovation is a 6DOF controllable mirror mount with high dynamic range and fast tip/tilt capability for space based applications. It will enable the actuation of large (~1m) mirrors over centimeter stroke with low bandwidth to correct deployment errors, provide sub-micron correction of thermal distortion with picometer precision, and enable nanometer/nanoradian tip/tilt wavefront correction up to tens of Hz. The actuator will be designed to decouple the mirror from support resonances so that the mirror control system can suppress the system dynamic response. The mount will be optimized from a systems perspective, including thermal effects, total mass including the amplifiers and induced mechanical noise.

Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|------------------------------------|-------------------------|-------------|-------------------------|
| ★Goddard Space Flight Center(GSFC) | Lead Organization | NASA Center | Greenbelt, Maryland |
| Nightsky Systems, Inc. | Supporting Organization | Industry | Raleigh, North Carolina |



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Maryland

North Carolina

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.2 Observatories
 - └ TX08.2.1 Mirror Systems